

REMARKS

Reconsideration and allowance of the present application based on the following remarks are respectfully requested. Claims 2-4, 7, 13, 15, 25, 27, 29-31, 33, 35, 37, 40, 41, 43-45 and 47 are pending in the present Application. Claims 1, 5-6, 8-12, 14, 16-24, 26, 28, 30/11, 30/12, 30/32, 30/34, 30/36, 30/38, 30/39, 30/42, 30/46, 31/23, 31/24, 32, 34, 36, 38, 39, 42 and 46 have been canceled without prejudice or disclaimer. Claim 47 is newly added. Claim 47 is similar to claim 27 but depending from claim 44.

Applicants are appreciative of the courtesies extended by the Examiner to Applicants' representatives during the personal interview of September 9, 2003. The Examiner indicated that Figure 22A showed considerable structural differences with the prior art and proposed an amendment to claim 2 that would put claim 2 in form for allowance. The Examiner indicated that if claim 2 is amended to recite "a labyrinth heat transfer space formed by complementary concentric or spiral grooves provided on opposite surfaces of said electrode unit and said cooling block," this language would distinguish claim 2 over the cited references.

Accordingly, Applicants have amended claim 2 to recite, *inter-alia*, "a labyrinth heat transfer space formed by complementary concentric or spiral grooves provided on opposite surfaces of said electrode unit and said cooling block."

Consequently, Applicants respectfully submit that claim 2 and dependent claims are in form for allowance.

Claim Rejections – 35 U.S.C. § 103

Claims 2, 14, 25, 29, 30, 31, 37, 40, 41 and 46 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Heimanson *et al.* (US Pat. No. 5,775,416) in view of Gilchrist *et al.* (US Pat. No. 5,846,375).

Claims 14 and 46 have been canceled without prejudice or disclaimer. Therefore, the rejection of claims 14 and 46 under § 103(a) is rendered moot.

Claims 2, 37 and 40 have been amended to recite, *inter-alia*, "a labyrinth heat transfer space formed by complementary concentric or spiral grooves provided on opposite surfaces of said electrode unit and said cooling block." Claim 25 has been amended to recite, *inter-alia*, "a labyrinth heat transfer space formed by complementary concentric or spiral grooves provided on opposite surfaces of said placement table and said cooling block." Applicants submit that amendments to claims 2, 25, 37 and 40 obviate the above rejection.

Heimanson *et al.* merely describes “a second cavity 50” formed by the O-ring seal 44 and annular seat 46, together with the respective bodies 26 and 36 of the heating and cooling units 24 and 34 (see, Figure 1 and col. 3, lines 50-52 in Heimanson *et al.*). The second cavity 50 in Heimanson *et al.* is a simple space and does not form a labyrinth heat transfer space as recited in the claims. Consequently, Heimanson *et al.* does not disclose, teach or suggest “a labyrinth heat transfer space formed by complementary concentric or spiral grooves provided on opposite surfaces of said electrode unit and said cooling block,” as recited in claims 2, 37 and 40 or “a labyrinth heat transfer space formed by complementary concentric or spiral grooves provided on opposite surfaces of said placement table and said cooling block,” as recited in claim 25.

With regard to Gilchrist *et al.*, this reference merely describes an electrode 14 having a cooling system imbedded in the body 15 of bottom electrode 14. The cooling system of Gilchrist *et al.* is comprised of conduits 32a, 32b, 32c and 32d which are embedded in the body 15 of electrode 14 and a coolant, typically water, flows into each conduit 32a-32d (see, col. 4 lines 26-29). Furthermore, the conduits of Gilchrist *et al.* do not form complementary spiral or concentric grooves provides on two opposite surfaces.

Accordingly, Gilchrist *et al.* does not disclose or suggest a labyrinth heat transfer space formed by complementary concentric or spiral grooves provided on opposite surfaces of the electrode unit and the cooling block as recited in claims 2, 37 and 40 or provided on opposite surfaces of the placement table and the cooling block as recited in claim 25.

Furthermore, there is no suggestion in the prior art for making such structure with the claimed combination of elements and even if one were to replace Heimanson *et al.* cavity 50 “heat transfer space” with Gilchrist *et al.* conduits 32a, 32b, 32c and 32 “labyrinth heat transfer space”, which Applicants do not concede, one would not obtain the labyrinth heat transfer space formed by complementary concentric or spiral grooves provided on opposite surfaces of the electrode unit and the cooling block as recited in claims 2, 37 and 40 or provided on opposite surfaces of the placement table and the cooling block as recited in claim 25.

Consequently, for at least above reasons, neither Heimanson *et al.* nor Gilchrist *et al.* disclose, teach or suggest, alone or in combination, the subject matter recited in claims 2, 25, 37, and 40.

Therefore, Applicants respectfully submit that claims 2, 25, 37 and 40, and claims 29-31, and 41 which are dependent therefrom, are patentable and respectfully request that the § 103(a) rejection of claims 2, 14, 25, 29-31, 37, 40, 41 and 46 be withdrawn.

Claims 3 and 4 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Heimanson *et al.* and Gilchrist *et al.* in view of McMillin *et al.* (US Pat. No. 5,835,334).

Claims 3 and 4 are directly or indirectly dependent from claim 2. Therefore, for at least the reasons presented above for claim 2, Applicants submit that claims 3 and 4 are patentable over Heimanson *et al.* and Gilchrist *et al.*

McMillin *et al.* fails to overcome the above noted deficiencies of Heimanson *et al.* and Gilchrist *et al.*. Therefore, Applicants respectfully request submit that none of the prior art references, Heimanson *et al.*, Gilchrist *et al.* and McMillin *et al.* disclose, teach or suggest, alone or in combination, the subject matter recited in claims 3 and 4 and respectfully request that the rejection of claims 3 and 4 under § 103(a) be withdrawn.

Claims 7 and 27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Heimanson *et al.* and Gilchrist *et al.* in view of Shamouilian *et al.* (US Pat. No. 5,745,331).

Claim 27 has been amended to depend only from claim 25.

Claims 7 and 27 are dependent from claims 2 and 25, respectively. Therefore, for at least the reasons presented above for claims 2 and 25, Applicants submit that claims 7 and 27 are patentable over Heimanson *et al.* and Gilchrist *et al.*

Shamouilian *et al.* fails to overcome the above noted deficiencies of Heimanson *et al.* and Gilchrist *et al.*. Therefore, Applicants respectfully request submit that none of the prior art references, Heimanson *et al.*, Gilchrist *et al.* and Shamouilian *et al.* disclose, teach or suggest, alone or in combination, the subject matter recited in claims 7 and 27 and respectfully request that the rejection of claims 7 and 27 under § 103(a) be withdrawn.

Claims 11, 12, 23 and 24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Heimanson *et al.* in view of Sherman (US Pat. No. 5,535,090) and Mori *et al.* (US Pat. No. 5,935,460).

Claims 11, 12, 23 and 24 have been canceled without prejudice or disclaimer. Therefore, the rejection of claims 11, 12, 23 and 24 under § 103(a) is rendered moot.

Claim 21 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Heimanson *et al.* in view of Sherman and Mori *et al.*

Claim 21 has been canceled without prejudice or disclaimer. Therefore, the rejection of claim 21 under § 103(a) is rendered moot.

Claim 13 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Heimanson *et al.* and Gilchrist *et al.* in view of Niori *et al.* (US Pat. No. 5,800,618).

Claim 13 is dependent from claim 2 and for at least the reasons presented above with regard to claim 2, Applicants submit that claim 13 is patentable over Heimanson *et al.* and Gilchrist *et al.*

Niori *et al.* fails to overcome the above noted deficiencies in Heimanson *et al.* and Gilchrist *et al.* Therefore, Applicants respectfully request submit that none of the prior at references, Heimanson *et al.*, Gilchrist *et al.* and Niori *et al.* disclose, teach or suggest, alone or in combination, the subject matter recited in claim 13 and thus, respectfully request that the rejection of claim 13 under § 103(a) be withdrawn.

Claim 15 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Heimanson *et al.* and Gilchrist *et al.* in view of Ishii (US Pat. No. 5,529,657).

Claim 15 is dependent from claim 2 and for at least the reasons presented above with regard to claim 2, Applicants submit that claim 15 is patentable over Heimanson *et al.* and Gilchrist *et al.*

Ishii fails to overcome the above noted deficiencies in Heimanson *et al.* and Gilchrist *et al.* Therefore, Applicants respectfully request submit that none of the prior at references, Heimanson *et al.*, Gilchrist *et al.* and Ishii disclose, teach or suggest, alone or in combination, the subject matter recited in claim 15 and thus Applicants respectfully request that the rejection of claim 15 under § 103(a) be withdrawn.

Claim 32 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Heimanson *et al.* in view of Sherman, McMillin *et al.* and Gilchrist *et al.*

Claim 32 has been canceled without prejudice or disclaimer. Therefore, the rejection of claim 32 under § 103(a) is rendered moot.

Claim 33 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Heimanson *et al.* in view of Gilchrist *et al.*, and McMillin *et al.*

As conceded in the Office Action, Heimanson *et al.* does not teach seal members are metallic and does not teach the stainless steel member in Heimanson *et al.* as being made of an electrically insulating material with a coefficient of thermal conductivity of 80 W/mk.

Furthermore, as conceded in the Office Action, Heimanson *et al.* and Gilchrist do not teach an insulating member divides the heat transfer space into an upper and a lower space.

In addition, for at least the reasons provided above with regard to claim 2, none of the prior art references, Heimanson *et al.* and Gilchrist *et al.* disclose, teach or suggest, alone or in combination, a labyrinth heat transfer space formed by complementary concentric or spiral grooves provided on opposite surfaces of the electrode unit and the cooling block, as recited in claim 33. McMillin *et al.* fails to overcome the above noted deficiencies in Heimanson *et al.* and Gilchrist *et al.* Thus, it is respectfully requested that the rejection of claim 33 under § 103(a) be withdrawn.

Claim 34 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Heimanson *et al.* in view of Sherman and Husain *et al.* (US Pat. No. 5,548,470).

Claim 34 has been canceled without prejudice or disclaimer. Therefore, the rejection of claim 34 under § 103(a) is rendered moot.

Claims 35 and 44 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Heimanson *et al.* and Gilchrist *et al.* in view of Husain *et al.*

As conceded in the Office Action, Heimanson *et al.* and Gilchrist do not teach a contact rate between interfacing surfaces of the structures.

Furthermore, none of Heimanson *et al.* and Gilchrist *et al.*, alone or in combination, disclose, teach or even suggest a labyrinth heat transfer space formed by complementary concentric or spiral grooves provided on opposite surfaces of the electrode unit and the cooling block, as recited in claims 35 or a labyrinth heat transfer space formed by complementary concentric or spiral grooves provided on opposite surfaces of the placement table and the cooling block, as recited in claim 44. Husain *et al.* fails to overcome the deficiencies of Heimanson *et al.* and Gilchrist *et al.*

Therefore, Applicants respectfully submit that claims 35 and 44 are patentable and respectfully request that the rejection of claims 35 and 44 under § 103(a) be withdrawn.

Claims 36 and 38 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Heimanson *et al.* in view of Sherman.

Claims 36 and 38 have been canceled without prejudice or disclaimer. Therefore, the rejection of claims 36 and 38 under § 103(a) be withdrawn.

Claim 39 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Heimanson *et al.* and Gilchrist *et al.* in view of Sherman.

Claim 39 has been canceled without prejudice or disclaimer. Therefore, the rejection of claim 39 under § 103(a) is rendered moot.

Claim 42 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Heimanson *et al.*, Sherman, and Gilchrist *et al.* in view of Lei *et al.* (US Pat. No. 5,556,476).

Claim 42 has been canceled without prejudice or disclaimer. Therefore, the rejection of claim 42 under § 103(a) is rendered moot.

Claims 43 and 45 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Heimanson *et al.* and Gilchrist *et al.* in view of Lei *et al.*

As conceded in the Office Action, Heimanson *et al.* and Gilchrist *et al.* do not teach a gas blower to provide a release of heat. Furthermore none of the prior art references Heimanson *et al.*, Gilchrist *et al.* and Lei *et al.* disclose, teach or suggest “a labyrinth heat transfer space formed by complementary concentric or spiral grooves provided on opposite surfaces of said electrode unit and said cooling block,” as recited in claim 43 or “a labyrinth heat transfer space formed by complementary concentric or spiral grooves provided on opposite surfaces of said placement table and said cooling block,” as recited in claim 45.

Therefore, Applicants respectfully submit that none of the prior art references, Heimanson *et al.*, Sherman, Gilchrist *et al.* and Lei *et al.* disclose, teach or suggest, alone or in combination, the subject matter recited in claims 43 and 45. Thus, Applicants respectfully request that the rejection of claims 43 and 45 under § 103(a) be withdrawn.

Claim 30 has been amended to depend from any one of claims 2, 3, 4, 7, 13, 15, 33, 35, 37, 40, 41 and 43. For at least the reasons presented above with regard to independent claims 2, 33, 35, 37, 40 and 43, Applicants respectfully submit that claims 30/2, 30/3, 30/4, 30/7, 30/13, 30/15, 30/33, 30/35, 30/37, 30/40, 30/41 and 30/43 are patentable.

Claim 31 has been amended to depend from any one of claims 25, 27, 29, 44, 45 and 47. For at least the reasons presented above with regard to independent claims 25, 44 and 45, Applicants respectfully submit that claims 31/25, 31/27, 31/29, 31/44, 31/45 and 31/47 are patentable.

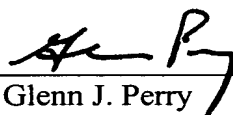
Claim 47 has been newly added. Claim 47 is similar to claim 27 but depending from claim 44. For at least the reasons provided above with regard to claim 44, Applicants respectfully submit that claim 47 is patentable.

CONCLUSION

In view of the foregoing, the claims are now in form for allowance, and such action is hereby solicited. If any point remains in issue which the Examiner feels may be best resolved through a personal or telephone interview, he is kindly requested to contact the undersigned at the telephone number listed below.

All objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited.

Respectfully submitted,  
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